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P R E F A C E.

THIS Volume, like the preceding ones, will be found divided into the several heads under which the business of the Society is conducted: and in the Class of Agriculture, are inserted several papers which, it is presumed, will prove of very considerable utility: as, a mode of preserving young Plantations from the depredations of Hares, Rabbits, &c.—a full account, verified by actual experiment, of the advantage attending a proper mode of Pruning Orchards; with a method of preparing a medicated Tar for preventing the injuries arising to the wounded parts of the trees, from all kinds of insects. Should the method here

recommended be found to answer the general purpose of improving the husbandry of Orchards through the kingdom, as is the express wish and belief of the author; the advantages resulting from this communication will prove of infinite benefit to the Community.

This session has produced to the Society four Claimants for the Premium offered for discovering the comparative advantage of the Drill and Broad-cast Culture of Wheat, all which have been judged worthy of Rewards; and from them the Public will be enabled to form an opinion on what soils, and under what circumstances of culture and situation, the drill or broad-cast method is likely to prove most advantageous. The same may be said of the culture of Turneps, on which also a Paper is inserted.

A Letter from Mr. Hollins, of Berriew, whose papers have already been published in the Eighth and Ninth Volumes of these Transactions, is here inserted; which may
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P R E F A C E.

be considered as a supplement to those already printed on the subject, and seem to prove the doctrine therein advanced, on the preserving crops of Potatoes from the disease called the Curl, to be well founded.

Some Letters on the advantages of feeding Cattle with Potatoes, and Stall-feeding Horses, printed in the following Sheets, will throw fresh light on those subjects, and spread the knowledge of the benefits arising therefrom through the kingdom.

The cultivation of that useful drug, the Rheum Palmatum, or True Rhubarb, having extended itself to many parts of this kingdom, Rewards were this year adjudged to Mr. Jones, of Fish-street Hill, and Mr. Halley, of Pontefract, whose Papers are inserted in this Volume. It was with much satisfaction the Society observed that some of the Rhubarb received from Mr. Halley, was perfectly dry, and cured in a manner superior to any hitherto produced for their inspection; and as it is well known that the plant thrives luxuri-

antly in this Island, and that the only obstacle to its becoming an article of consequence, both for home consumption and exportation, was the supposed difficulty of curing it properly: that difficulty being obviated, there seems every reason to believe Rhubarb may become an article of very considerable importance to this country.

The improving the Waste Lands of this Kingdom has ever been an object of serious consideration to the Society; and it is with particular pleasure the account of Mr. Haffal's Improvements has been received; as the perusal of it will probably afford some very useful information on that subject.

The preserving Seeds, when sown, from the depredation of Mice and other Vermin, is a matter of great importance; and the method proposed by Mr. Browne may well deserve the attention of the gardener, whose crops are frequently lost from this cause.

Mr.

P R E F A C E.

vii

Mr. M'Dougale's Hoe, of which (at work) a view is prefixed to this Volume, appeared, on trial, to exceed any instrument of the kind hitherto produced.

Notwithstanding there is good reason to believe that the art of spinning a number of threads by one person, at one time, took its rise from the Premiums offered by this Society (see Preface to Vol. I. of these Transactions), yet the improvement of the common Spinning-wheel has not been neglected; and this year a very advantageous improvement having been produced by Mr. Antis, of Fulneck, a Reward was given to him for it; and a Plate and Description of the Machine inserted in this Volume.—Another, which, though not properly a part of the Spinning-wheel, is connected with it, has also been produced this year: this is a method of winding thread into balls during the spinning, whereby the time lost in winding, according to the present mode, is saved, without any sensible additional labour to the spinner. A Plate of this contrivance would have been

inserted in this Volume; but, as the Society have thought fit to offer a premium for the best Drawing, by young persons, of this Machine, it has been judged improper the print should now appear; but may probably make part of some future publication.

The two fore-mentioned Machines are inserted under the head of Manufactures; for though, with regard to their construction, they might be considered under the Class of Mechanicks, yet, in their application and effect, they are more properly arranged, as tending to improve the Manufactures of the Country.

Under the head of Mechanicks will be found, in the following sheets, an Account and Description of an improved Gudgeon, for the Upright Shafts of Mills; an ingenious contrivance, with a Plate, for equalizing the Water on Water-wheels; a Crane with a double Gib, by which large Weights may be deposited immediately from the Crane, on the spot where they are intended to be laid; a complete Description,

P R E F A C E.

ix

tion, with a Plate, of a method effectually to secure a Ship's Rudder, by Capt. Edward Pakenham, to whose ingenuity and attention this Country is already so much indebted.

The encouragement given by the Society to the taking Whales by the Gun Harpoon, has been the means of establishing that advantageous practice ; and every contrivance that may forward that business, has uniformly met their approbation and reward. This year there has been produced to them a contrivance, by which the principal objections to the use of the Gun Harpoon will be overcome ; and as Mr. Bell has given unequivocal proofs of his ingenuity and abilities in his profession (see Vol. X. p. 203), there is every reason to believe what he has now communicated will redound to his own credit, and answer very useful purposes in the Whale Fishery.

The frequent and melancholy accidents that happen, in Walking-wheel Cranes,
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by the weight suspended overcoming the men in the Wheel, the Society have given several Rewards for the discovery of some certain method of preventing those misfortunes: and this year a Bounty has been voted to an ingenious person for his contrivance to answer that purpose.

Under the Class of Colonies and Trade, will be found a Letter from the ingenious and learned Dr. Dancer, of Jamaica, on the subject of Cinnamon and some other plants, the produce of that Island. The Society have this year been favoured with a Letter from Dr. Anderson, Superintendant of the Botanic Garden in St. Vincent's, inclosing a catalogue of the plants growing in that garden, which, though not thought proper for insertion in this Volume, is preserved in the Society's Library for the inspection of the curious.

The Silver Medal has this year been voted to Mrs. Anstey, now resident at Madras. This lady, who, in the war with Hyder Ally,

Ally, having retired to Ceylon, brought from thence, on her return, two plants of the Cinnamon-tree, which, by letters from that settlement, appear to have produced so many young trees as in time promise to supply this country with a large quantity of that valuable spice.

The principal Papers to be found in this Volume having been thus summarily described, it may not be improper to remark that the present flourishing state of the Society has enabled them to consider of proposing to the Public some new Premiums, as well as increasing, in many cases, the pecuniary Rewards already offered; all which the reader will readily perceive.

Among the new Premiums will be found one for planting Osiers, which took its rise from letters sent to the Society by the makers of baskets for fruit, &c. wherein it is stated, that from several causes (among which is the want of importation of the rods from France, from whence many used

to be brought), Officers were become so scarce in England, as not only very much to enhance the price of those articles in the making of which they are used, but had also been the means of throwing a number of industrious people out of employ : this, therefore, in a double sense, became a proper object of the Society's attention.

Under the head of Agriculture will also be found a Premium offered for discovering an effectual method of preventing and curing the ill effects of the Fly on Sheep. When the mischiefs arising from that insect are considered, the utility of such a discovery will be at once fully obvious.

Under the head of Chemistry, two new Premiums are offered, the one for discovering a method of clearing Feathers from the Oil that causes their disagreeable scent in furniture ; and the other, for a mode of glazing the ordinary kinds of Earthen Ware.

In Mechanics, it has been judged proper to discover, by the offer of a Premium,
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P R E F A C E.

xiii

an easily portable Machine for loading and unloading goods. And under the Class of Colonies and Trade, a considerable Reward is offered for forming a Botanic Garden in the Bahama Islands, for the purpose of encouraging the growth of Tropical plants in those Islands.

As it is the professed purpose of the Society's Institution to encourage, by every means in their power, the introduction of new and useful articles, as well as the improvement of such as are already known, that may tend to advance the Arts, Manufactures, and Commerce, of this Kingdom; the ingenious of both sexes are again invited to produce to the Society whatever may promote that end, fully assured that all works of utility will here meet a reward, and afford to the Authors the pleasing satisfaction of having contributed to the increase of the honour and riches of their native Country.